APRIL/MAY 2024

DCH41/GCH41 — ORGANIC CHEMISTRY – IV

Time : Three hours Maximum : 75 marks

Shanmuga Industries Arts & Science College T.V.Malai

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What are ylides?
2. Suggest any four protecting groups for alcohol.
3. Draw the structure of farnesol and linalool.
4. What is isoprene rule?
5. What are proteins? Suggest examples.
6. Draw the structure RNA and provide one of its biological functions.
7. Outline Pinacol-Pinacolone reaction.
8. What do you understand from the terms 'rearrangement reactions'?
9. Suggest any two applications of gas chromatography.
10. What is the importance of recrystallization?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) What happens when enamines are acetylated? Explain.

Or

(b) Suggest one example to explain one group C-C disconnections.

12. (a) Discuss the classification of terpenoids giving suitable example for each class.

Or

(b) Write the synthesis of morphine.

13. (a) Elaborate Merrifield synthesis.

Or

(b) Write a short note on structure and biological functions of DNA.

14. (a) Explain the mechanism of Favorskii rearrangement.

Or

(b) Outline Wagner-Meerwein rearrangement reaction.

15. (a) Discuss the principle and applications of TLC.

Or

(b) Identify and explain the type of distillation process by which alcohol and water can be separated.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write any two synthetic uses for the following:

(a) DCC (b) DIBAL

17. Elucidate the structure of citral.

18. Outline the biosynthesis of cholesterol.

19. Explain the following mechanism

(a) Baeyer-Villiger reaction

(b) Sommlet-Hauser reaction.

20. Describe the technique of ion exchange chromatography and give some of its applications.

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